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Shareholder Liability: A New (Old) Way of Thinking about Financial Regulation

Post-crisis banking regulation, which focuses on capital adequacy ratios, liquidity and leverage ratios, is prescriptive, costly, wildly complex, and pays little attention to incentives. There is a better way.

Finn Poschmann



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THE STUDY IN BRIEF

In the wake of a series of crises, international and domestic financial regulation has become highly complex and prescriptive, and oriented to leverage, liquidity, and capital ratios among financial institutions. This raises concerns over monitoring incentives, and over the increased role of deposit insurance, which insulates depositors and shareholders from some or most of the costs of an institution's failure.

However, until the mid-20th Century, banking regulation in the United States, Canada, the UK and elsewhere relied mostly on monitoring by shareholders and depositors. Central banks did not necessarily exist, and where they did, they did not necessarily have a modern lender-of-last-resort function. There were financial regulators, but depositors were expected to pay attention to the behaviour of the banks that held their savings.

Senior bank managers often were exposed to liability for net losses incurred in the event that their financial institutions failed, as were other shareholders. The limited-liability corporate form, while it existed, did not apply to deposit-taking financial institutions. The reason was that owner-managers of banks often had incentives, and the capacity, to use for their own benefit the funds they held on behalf of others.

Nonetheless, while bank runs, failures and crises occurred, bank depositors were nearly always made whole, and financial crises tended to be sharp, brief, and localized. Over the course of the 20th Century, shareholder liability, or double liability as it is often called, disappeared from the regulatory framework, to be displaced by deposit insurance, which has the political and economic attraction of reducing the incidence of bank runs and limiting their impact on depositors.

In Canada, concerns over deposit insurance arise mostly at the provincial level. A number of provinces have expanded the size and range of deposits they cover, and British Columbia, for example, has introduced unlimited deposit insurance. This expansion will pose stability risks for the provinces that oversee the insurers, and for regulators and depositors outside those provinces. Implicit and explicit federal backstops for such insurance raise cross-province concerns.

All of these features pose risks that deserve attention. At the national or international level, regulators should focus more on incentives. While reintroducing shareholder responsibility for bank liabilities in an insolvency seems implausible, other equity-based market instruments, such as equity recourse notes as proposed by Bulow and Klemperer (2013) could achieve the same effect.

Irrespective of such sweeping change, there are clear domestic imperatives. Provincial deposit insurers should retrench, with respect to their coverage, and converge on a common standard, coincident with that offered at the federal level, for reasons discussed at the end of this review. Further, transitional expansion of federal deposit insurance to cover deposits at credit unions shifting from provincial to federal jurisdiction, announced in January 2014, should be withdrawn at the earliest opportunity.

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History contains many lessons, some of them surprisingly pertinent to the wave of international financial regulation that has developed since the 2008 global financial crisis.

Until the mid-20th Century, British-style banking regulation, which roughly describes the systems in place today in the United States, Canada, the UK and elsewhere, relied heavily on monitoring by shareholders and depositors, who had incentives to tame excessively risky management behaviour. Central banks did not necessarily exist, and where they did, they did not necessarily have a modern lender-of-last-resort function. There were financial regulators, but depositors were expected to monitor the behaviour of the deposit-taking institutions that held their savings, and whose bank notes they likely held.

Senior bank managers often were exposed to liability for net losses incurred in the event that their financial institutions failed, as were other shareholders. The limited-liability corporate form, while it existed, was not intended for, nor did it apply to, deposit-taking financial institutions. The reason, obvious to legislators and regulators at the time, was that owner-managers of banks often had incentives, and the capacity, to use the funds they held on behalf of others to their own benefit, or otherwise engage in risky lending and investing behaviour.

Nonetheless, while bank runs, failures and crises occurred, bank depositors were nearly always made whole, and financial crises tended to be sharp, brief, and localized – positive features. Over the course of the 20th Century, shareholder liability, or double liability as it is often called, disappeared from the regulatory framework, to be displaced after a fashion by deposit insurance, which has the political and economic attraction of reducing the incidence of bank runs and limiting their impact on depositors.

In the wake of a series of financial crises of differing scope and scale, international and domestic regulation has become highly complex, prescriptive, and oriented to leverage, liquidity and capital ratios among financial institutions.¹ This raises concerns over monitoring incentives, concerns that are magnified by an increasing role, in some jurisdictions, for deposit insurance, which insulates depositors from some or most of the costs of an institution's potential failure.

In Canada, concerns over deposit insurance arise mostly at the provincial level. A number of provinces have expanded the size and range of deposits they cover, and British Columbia,

Portions of this paper draw extensively on Macey and Miller (1991) and I thank the authors for their diligence and foresight in that work. I thank also Christopher Ragan, Pierre Siklos and Philippe Bergevin for comments on an early draft, and Omar Chatur for his careful archival work and other research assistance, and numerous anonymous reviewers as well as colleagues at the C.D. Howe Institute. Thanks, as well, to Richard Grossman for questions and advice and for access to selected historical data, to David Bond for history on Canada's adoption of deposit insurance, and to Jeremy Bulow for patient comments on the likely market characteristics of equity recourse notes. Any remaining errors are my responsibility.

1. Leverage ratios and capital ratios have many regulatory definitions, and each expresses a financial institution's capital, typically common equity plus reserves, expressed as a percentage of consolidated assets or risk-weighted assets, mostly loans. Liquidity, the liquidity coverage ratio in particular, refers to an institution's access to high-quality liquid assets relative to its short term potential obligations.

for example, has introduced unlimited deposit insurance. This expansion will pose stability risks for the provinces that oversee the insurers, for regulators and depositors outside those provinces, and poses problems, too, for competition among deposit-taking institutions, which operate in different provinces and under different regulatory regimes. Federal backstops for such insurance implicitly, and now in some cases, explicitly, exist with cross-border implications.

In what follows, I establish the current context, outlining the history that ended double liability and created deposit insurance within the current regulatory framework. I then propose steps for redress. At the national or international level, regulators should focus more on incentives. While reintroducing shareholder responsibility for bank liabilities in an insolvency seems implausible, other equity-based market instruments, such as equity recourse notes as proposed by Bulow and Klemperer (2013) could achieve the same effect. The resulting system would rely less on regulatory capital ratios, such as those set in place under the Basel accords, and regulators' skill in setting and enforcing them.

Irrespective of such sweeping potential changes, there are clear domestic imperatives. Primary among them is that provincial deposit insurers should retrench, with respect to their coverage, and converge on a common standard, coincident with that offered at the federal level, for reasons discussed at the end of this review. Further, transitional expansion of federal deposit insurance to cover deposits at credit unions shifting from provincial to federal jurisdiction, announced in January 2014, should be withdrawn at the earliest possible opportunity.

THE CURRENT CONTEXT

The international financial regulatory system, which took on heightened and very public importance when global financial markets imploded in summer 2008, is organized around capital adequacy, leverage

ratios and liquidity in private financial institutions, and rules on banking conduct and structure, usually backstopped by deposit insurance or other implicit or explicit government guarantees of financial institution liabilities. The effort has not always been successful in avoiding or mitigating financial crises. That may be because the framework pays less attention than it might to the incentives that can influence financial institutions' behaviour, while paying more attention than needed to the arithmetic outcomes, such as capital ratios, associated with those institutions' decisionmaking in responding to market and regulatory incentives.

The problem is a familiar one. While recognizing the need for regulation and oversight, Porter (1964) wrote:

We are, however, convinced that excessive use of asset ratios and investment rules adds little to the protection of the public and can have serious effects on the adaptability and competitiveness of the financial systems. We therefore think it unwise to rely heavily on them. (p358.)

Moreover, financial institutions often tend toward herd behavior, which may be of particular concern in the current regulatory context. Common regulatory incentives lead banks to structure broadly similar asset portfolios, and to take similar approaches to risk assessment and management. Financial institutions tend to assemble portfolios of assets (loans) that are intended to be uncorrelated, to optimize their own risk-return tradeoffs. But because the institutions face similar incentives and possess similar information sets, the asset portfolios across the system become cross-correlated. The presence of government guarantees such as deposit insurance means that the risks attending these cross-correlations do not land with the individual financial institutions (Acharya 2009).

The similarity among assets reduces the degree of risk diversification that the financial intermediation system might otherwise produce. The most recent example, for which no clear resolution is in sight,

is the case of many European banks having faced common incentives to hold large quantities of sovereign debt on their balance sheets.

Such sovereign debt, often highly rated though in practice risky, is treated favourably under the internationally agreed capital adequacy standard, known as Basel.² This feature lay at the heart of European resistance (including from the European Central Bank and central banking system) to a 2010 write-down of Greek debt, which would have harmed the balance sheets of many Western European private banks, as well as those of the national central banks with whom domestic banks had registered Greek and other sovereign debt as collateral. Yet a writedown would have set the stage for a faster Greek fiscal and economic recovery, and avoided some of the financial shudders that since have rippled through Europe (IMF 2013a, p27), including bank runs and doubts, as in Cyprus, over the safety of insured deposits.

Regulators and legislators, apparently aware of the need to supplement rules aimed at bank balance sheets with additional prescriptions, have responded with detailed regulation. Emergent regulation associated with Dodd-Frank in the US is one example: it regulates bank conduct in extensive detail, and seeks to limit the scope of activities carried on within a financial corporation.³

Canada's response had been less sweeping than Dodd-Frank, but is in some instances similarly prescriptive: the Office of the Superintendent of Financial Institutions (OSFI) in 2012 produced Guideline B-20: Residential Mortgage Underwriting Practices and Procedures, which assigns responsibilities to financial institutions' boards of directors with respect to clarifying, understanding and signing off on loan underwriting and risk management processes.⁴ In each case, the rules seek to circumscribe financial institutions' conduct as the latter respond to market and regulatory incentives.

In the US, Dodd-Frank's corporate structure initiatives such as the "Volcker Rule" bear on some institutional incentives.⁵ Taken together, this extraordinarily complex package of measures, which poses organizational as well as significant legal and other compliance burdens, might possibly succeed in reducing the likelihood of idiosyncratic institutional failures of the scale that might trigger systemic financial crises.

Yet, to paraphrase Wachtel (2013, p9): On the individual institution (micro) level, the question that looms is whether Dodd-Frank's extra regulatory burden will have any effect; on the macro side, one can only conjecture whether it could identify new sources of risk effectively.

2 This feature of the Basel capital rules was present in what is known as Basel I, agreed in 1988 with legal effect in 1992, and Basel II, which was entering its implementation phase at the time the recent financial crisis evolved. The main elements of the approach remain in Basel III, which at the time of writing is entering its final phases of agreement and initial implementation.

3 *Dodd-Frank Wall Street Reform and Consumer Protection Act*; Public Law 111-203, H.R. 4173: An act to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end "too big to fail", to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.

4 For an overview see, for instance, <http://www.mondaq.com/canada/x/189588/charges+mortgages+indemnities/OSFI+Guideline+B20+Residential+Mortgage+Underwriting+Practices+And+Procedures>.

5 Another class of measures, which might be useful in disciplining behavior, are contingent capital requirements, discussed below, which are entering implementation and which establish a class of debt that financial institutions may issue, intended to serve as a capital buffer when those institutions approach insolvency.

On this view, success in avoiding future crises will likely be limited, because the new measures respond to past experience, while the sources of the next crises are by definition unknown – “fighting the last war” is a common phrase. As well, the complexity of these detailed measures will make difficult both compliance and its assurance.⁶

These complex measures, however, might be more successful if they were supplemented and in part supplanted by simpler ones aimed at the oversight incentives bearing on shareholders and depositors in deposit-taking institutions. Shareholders’ role in financial institution oversight and monitoring, while limited by widely distributed shareholdings and their lack of voice in governance, could be strengthened through changes in liability rules. Depositors could take on a similarly active role if the financial regulatory framework relied less on deposit insurance. I discuss the mechanism in what follows.

HOW WE GOT HERE

The potential role of shareholder and depositor oversight is evident in North American banking history. Through the 19th and well into the 20th Century, deposit-taking institutions were numerous, generally small as compared with current firms, and failures were likewise numerous. And there were banking crises, sometimes associated with prolonged drought and crop failure. The US regional banking system grew contiguously with

the expansion, primarily westward, of railroads, land settlement, and the farm mortgage market. It was powerfully affected by interest rate differentials between the new Midwest states and Eastern banking centres.⁷ Midwest farmers borrowed money; Wall Street bankers lent it.

Historically, the Canadian system has been structured quite differently from its neighbour’s.⁸ One distinctive feature: the currency notes privately issued by Canadian banks were backed dollar for dollar by bank capital, which gave their holders some confidence in them – this feature would later prove important. Partly as a result, bank runs were rare in Canada, as opposed to the US.

Despite regional tensions, bank failures and banking crises, depositors generally were made whole, and did not often lose much of their savings in the US, or in Canada. Notwithstanding thousands of bank failures in the US over the 1865-to-1934 period, average depositors’ losses in nationally chartered banks were 4.9 cents per hundred dollars of deposits.⁹ Over the 1865-to-1920 period in Canada, where bank runs and failures were rarer, depositors’ losses averaged similarly low numbers (Bordo, Redish and Rockoff 1995). How could this be, when neither capital adequacy regulation in its now common form (minimum regulatory capital ratios), nor government-backed deposit insurance generally existed?¹⁰

Losses by depositors in the wake of failures were small in both Canada and the United States,

6 *The Economist* (2012) and Morrison and Foerster (2010). The latter industry “cheat sheet” to Dodd-Frank is 28 pages long.

7 In 1912, for example, the average interest rate paid on deposits was 2.4 percent in New England and 2.7 percent in other Eastern states, and 3.1 and 3.8 percent in the Midwest and Western states (Comptroller of the Currency 1913).

8 What was distinctive to the US, as discussed below, was the large number of small banks, usually operating under state charters, whose fortunes and failures depended on the health of farms near the town or in the state in which they did business; this feature was in part a product of various state banking laws’ prohibition on branching.

9 “[H]ardly an indication of a banking system run amok. The evidence is rather strong that national banks were conservatively managed....” (Macey and Miller 1991).

10 Deposit insurance was established federally in the US through the Federal Deposit Insurance Corporation (the FDIC) by way of the *Banking Act*, 1933, and in Canada in by way of the *Canada Deposit Insurance Corporation Act* 1967, which created the CDIC.

owing to the "double liability" clauses shared by their national banking charters. Shareholders were responsible for a pro-rated share of bank liabilities in the event of wind-up, and this was a form of bank capital:

Troubles of the Home Bank of Canada seem likely to result in a rare occurrence in Canadian banking history – a loss of a certain portion of depositors' money. The bank, as a result of the "double liability" clause can make a claim on all its shareholders for an amount equal to the par value of their stock, the same as with our national bank stockholders. This would add about \$2,000,000 to the liquid assets of the Home Bank. (*Wall Street Journal*, 1923.)¹¹

In the past, when raising equity capital, firms issuing common stock did so under terms that established a stock's par, or initial value, which may have been close to the price at which the public offering was expected to trade when initially made available to outside investors.¹² As a matter of course and in the nature of markets, shareholders were always at risk of losing what they had paid for their stock. And the law in Canada, federally in the US and in many US states, made clear that shareholders who took up the offer were at risk, in the event of an insolvency, of being liable for

an additional amount beyond the normal risk associated with equity investments. Their additional liability was equivalent to the lesser of the par value of their stock and their equity share of the firm's liabilities, to the extent that those liabilities exceeded the assets available to discharge them within the firm.¹³

The reason for the rule was to ensure that bank managers faced taut incentives to lend at least as prudently as they saw fit – banks were small and narrowly held, and senior managers usually were also major shareholders. Shareholders' potential liability in the system was conceptually similar to what today would be called contingent capital, in that the par value amount would be available to meet liabilities if the bank neared or entered insolvency.

How did this form of contingent capital affect bank balance sheets? Some US states required dual or double liability on the part of shareholders who purchased stock in banks registered in those states; others did not.¹⁴ This enables a comparison of the capital ratios of banks that operated in states that required double liability with those that did not: Banks chartered in double liability states operated with less capital (Table 1). This implies

11 The *Journal* noted that the \$2,000,000 assessment on shareholders was fully offset by losses on one loan to a British Columbia forestry firm.

12 Bank charters, historically established by legislation, sometimes set par at \$100.

13 "In the event of the property and assets of the bank being insufficient to pay its debts and liabilities, each shareholder of the bank shall be liable for the deficiency to an amount equal to the par value of the shares held by him, in addition to any amount not paid up on such shares." Section 89, *Banks and Banking Act*, Chap. 31., 53 Vict., 1890; an earlier version appeared in similar legislation enacted in 1871. This provision matched language then common in Canadian banking charters; the first bank charter in British North America to include such a provision was the Bank of Nova Scotia's 1832 charter (Curtiss 1948); Canadian banking charters were granted by the British Parliament, which insisted on the double liability clause. In the US, many states had double liability laws in the first half of the 19th Century; typical language was adopted in *National Banking Act* of 1863: "each shareholder shall be liable to the amount of the par value of the shares held by him, in addition to the amount invested in such shares," Congressional Globe, 37th Congress, 3rd Session; 824 (1863). Amendments in 1864 clarified that shareholders were liable "equally and ratably," meaning that one shareholder would not be liable for others' shortfalls (Macey and Miller 1991).

14 Some required treble liability, others unlimited liability, and others allowed liability to be set under voluntary terms in the bank's charter. These rules routinely changed (see Grossman 2007). In what follows, I use only the term double liability.

Table 1: Capital Ratios – Higher in Single Liability States

	Asset-Weighted Capital Ratios (percent)			
	1907	1912	1917	1922
States with Single Liability	19.6	22.7	18.3	14.9
States with Double Liability	17.7	18.2	14.2	13.4

Note: Capital ratio defined as capital stock, surplus, undivided profits and unpaid dividends relative to total assets; data for 1922 exclude unpaid dividends in all states.

Sources: Author's calculations and Office of the Comptroller of the Currency, selected annual reports.

that shareholders' liability substituted for ordinary bank capital – shareholders and regulators were satisfied with lower regulatory capital ratios for banks operating under double liability charters, presumably on the view that in the event of insolvency, assets nonetheless would be available to fulfill most claims on them.¹⁵

At the same time, depositors' losses in banks that failed and were wound up under double liability rules remained low, even though the capital that normally would have protected them was less than otherwise. That was because the state courts and the Supreme Court of the United States developed extensive common law aimed at enforcing depositors' claims on shareholders, even when, in what was a common problem in the splintered US banking system, those claims straddled state or international borders, potentially confounding contract enforcement.¹⁶ In Canada, depositors'

losses owing to bank failures were roughly similar to those in federally (nationally) chartered US banks, where double liability was the rule (Table 2).¹⁷

The double liability rule delivered further benefits for system stability, by encouraging and enabling the rapid wind-up and eventual resolution of claims on banks that were insolvent or approaching insolvency. US courts' aggressive enforcement of assessments on shareholders helped resolve the proximate damage caused by bank failures. And the fact that senior bank managers – and owners – faced serious liability in the event of failure, which encouraged them to convey their shares to others while a bank was still solvent, encouraged consolidation and transfer of going-concern assets to others who would be able to absorb them profitably, leading to orderly bank wind-ups.

15 State chartered banks operated under a variety of minimum capital requirements: these typically were set by regulators as dollar amounts, not ratios, usually according to the size of city in which the bank operated (Grossman 2007). There is no consistent relationship between minimum capital requirements as between states with different liability statutes (ibid.), hence effective capital ratios seems a more reasonable axis of comparison than minimum capital requirements.

16 Contemporaneous issues of *The American Banker* reported extensively on these proceedings, and documented courts' success in enforcing claims, especially complex cross-border disputes.

17 The data in Table 2 compare Canada and federally chartered banks in the US, all of which operated under double liability. Data for state chartered banks operating under single or double liability were unavailable at the time of writing.

Table 2: Low Deposit Losses in Canada and the US

	Depositor Losses Per \$100 of Deposits (Dollar)		
	1865-1880	1881-1900	1901-1920
US Nationally Chartered Banks	0.06	0.07	0.01
Canadian Banks	0.07	0.16	0.01

Sources: Macey and Miller (1991), Bordo, Redish and Rockoff (1995).

That bank owners would arrange affairs to limit their personal exposures would sometimes appear in a bad light, certainly so where sham transactions were involved. The presumed flaws of the double liability system were a commonplace:

Shares were transferred just before failure to men unable to meet such calls and willing to be used in this manner, or shares were found to be held by men of straw who owed a corresponding amount to the bank. Or, again, many of the shareholders were borrowers for amounts far in excess of their holdings in shares, and the failure of the bank precipitated their failure as well, and they were unable to pay. (Walker 1894.)

In view of such concerns, legislation and jurisprudence developed mitigative measures. Principal among them in Canada was the rule that share transfers must be accepted by the transferee, and that no transfers, if initiated in the sixty days before a failure, would be allowed legally to

stand, should the transferee prove unable to pay subsequent assessments (Walker 1894).¹⁸

Further, in the US, extensive litigation provided courts with experience and legal approaches that enabled them to "see through" sham transactions (Macey and Miller 1991). As a result, and owing to shareholders' incentives, orderly wind-up was the norm, limiting failures' impacts on the broader system:

...the number of national banks voluntarily placed in liquidation during the period greatly exceeded the number placed into liquidation involuntarily. Between 1863 and 1912, 2,357 national banks liquidated voluntarily, representing 22.8% of the total of national banks organized during the period. During the same period, only 525 banks were involuntarily liquidated and 25 of these were subsequently returned to solvency. Most of these liquidations resulted in the transfer of banking assets into other, presumably more efficient, hands. (Macey and Miller 1991.)¹⁹

18 At the time of the cited writing Walker was general manager of the Canadian Bank of Commerce. He was instrumental in founding, and was an early president of, the Canadian Bankers Association, and assisted in guiding the writing of the 1890 *Banks and Banking Act*.

19 Wind-ups could be speedy in Canada, too, and for the same reasons. On the evening of October 12, 1906, the Bank of Ontario privately announced its pending failure; by the afternoon of October 13, the bank's 31 branches were operating as branches of the Bank of Montreal, which had absorbed it. Depositors and bank note holders were made whole, although shareholder assessments took more than four years to settle (Johnson 1910).

SO WHAT HAPPENED?

Given historical experience, and the apparent benefits of double liability, why did it fade from practice in the US, to be displaced by deposit insurance?

Part of the answer is the emergence of widespread bank shareholding through the years up to the late 1920s. The subsequent market crash exposed a disperse group to liabilities that they were not well-suited to address. And the market crash and depression that followed involved a staggering number of bank failures and bank runs, which were politically damaging.

As a consequence, New Deal legislation included the first federal provisions for deposit insurance, which by the late 1930s onward had begun to make whole most depositors in newly failed institutions. Double liability increasingly was perceived as anachronistic and unnecessary, and certainly less politically attractive than deposit insurance, and the latter faded from the legislative landscape.

This intersection of law, economics, politics and financial regulation in the US is discussed in some detail in Appendix 1.

Why Did Double Liability Disappear in Canada, and Deposit Insurance Emerge?

The process in Canada was different from that in the US: deposit insurance was not a driving factor or a contemporaneous development, but the arrival of central banking was, alongside changing thinking about limited liability.

The key change was creation, in 1934, of the Bank of Canada, whose notes would progressively

displace those privately issued by Canadian chartered banks.²⁰ Revisions to the *Bank Act* in 1934 were required to accommodate this change, and the legislation made provision for reducing shareholders' liability in proportion to the banks' withdrawal of their own currencies.²¹

The *Bank Act* of 1944 required all chartered banks' outstanding banknotes to be redeemed for Bank of Canada notes by January 1, 1950, at which time the double liability provision would no longer have effect (Wagster 2007). Bank liabilities associated with the private currencies they had issued had disappeared, and become liabilities – notes in circulation – of the Bank of Canada. On this view, it was only reasonable that the potential bank liability, to which shareholders were exposed in the event of the bank's bankruptcy, should be extinguished dollar for dollar.

Federal deposit insurance in Canada was not created until 1967, and arose indirectly after a single event: the June 1965 failure of the Atlantic Acceptance Corporation Limited of Ontario, a provincially regulated finance company. The British Mortgage and Housing Trust Company, also of Ontario, held much of Atlantic Acceptance's debt, and in turn required rescue; depositors and others potentially were exposed to loss.

The Ontario government's political responses to the near-crisis included a proposal for a provincial deposit insurance program. Launching such a scheme, however, raised questions about coverage of deposits accepted by trust company branches in other provinces, when such coverage was not available to federally regulated banks. The resolution involved the creation of a federal deposit insurance

20 The *Bank of Canada Act*, 1934, royal assent July 3, 1934. The Bank was established as a privately held, publicly traded corporation, nationalized in 1938 by a subsequent government (see <http://www.bankofcanada.ca/about/who-we-are/history/>).

21 As banks extinguished the private notes they had issued, the direct claims on capital the notes represented would diminish, presumably freeing that capital to meet claims in the event of an insolvency, and simultaneously reducing the need for a contingent claim on shareholders.

system. The enabling act of the Canada Deposit Insurance Corporation received royal assent in spring 1967, in concert with the *Ontario Deposit Insurance Corporation Act* of a week prior.²²

In more recent years, expanding deposit insurance coverage has been a prominent feature among responses to the financial crisis, globally and domestically (Tables 3 and 4). Since 2008, every eurozone country has increased deposit insurance coverage, and a number of them have expanded government guarantees to include banks' non-deposit liabilities (IMF 2013). Some Canadian provinces have expanded their coverage and some, remarkably, cover registered savings and annuities and similar plans – including deposits invested in equity shares.

DISCUSSION AND IMPLICATIONS

History suggests that dual shareholder liability has had a role in influencing bank behavior and protecting depositors, in a market environment without deposit insurance or central banks.

In turn, that suggests that reintroducing a similar mechanism might have a useful role in supplementing or supplanting current initiatives aimed at conduct regulation, capital adequacy, liquidity, and in particular those oriented toward enhancements to deposit insurance.

Further, expansions of deposit insurance are to be avoided, for the moral hazard reasons discussed above and in more detail in Appendix 1.²³ Nonetheless, insurance coverage expansions are popular with depositors, legislators, and occasionally deposit

insurers, who may have institutional incentives to expand their premium base, revenues and scope of activity (Tables 3 and 4).

The shareholder liability alternative, or complement, to deposit insurance faces several problems. At the theoretical level, most large financial institutions are widely held and aggregating shareholder interests through boards of directors is difficult. This raises a powerful principal-agent problem when boards do not necessarily reflect shareholder interests. When this issue arises, shareholders may not have a ready route to influence bank conduct, other than by selling their shares. It may be in part for this reason, contemporaneous debates suggest, that support for double liability waned 80 years ago.

There are practical issues, too. Most common stocks currently have trivial par values; they are issued with no par value or at one penny.²⁴ To give the double liability measure effect, a transition date would be announced, and par values restated through revisions to numerous individual corporate charters; the liability also could be established as a function of market price, by way of legislation and regulation and notwithstanding existing corporate charters.

The heightened risk would reduce shareholders' equity value – the stock price – or what market participants were willing to pay to hold stock. If accompanied by commensurate changes to capital adequacy regulation that required institutions to hold less regulatory capital, however, the impact on equity values would be mitigated in part or in whole. Nonetheless, the proposal from the outset would encounter resistance from institutional

22 Hughes (1969), particularly pages 1640 onward. I thank David Bond for this reference.

23 The issue is current still: "To limit moral hazard, the scope and coverage of deposit insurance needs to be limited, premiums need to properly reflect risk as far as practicable, and deposit insurance needs to be complemented with strong supervision and capital regulation" (IMF 2013).

24 For example, the Royal Bank of Canada's "share capital consists of an unlimited number of common shares without nominal or par value and an unlimited number of first preferred shares and second preferred shares without nominal or par value, issuable in series, which classes may be issued for a maximum consideration of \$20 billion and \$5 billion, respectively" (Royal Bank of Canada 2012).

Table 3: International Deposit Insurance Coverage

USA	Before 2008	Insurance limit US\$100,000
	October 2008	Temporarily raised from US\$100,000 to \$250,000
	July 2010	Standard maximum deposit insurance amount raised to \$250,000
	November 2010	Unlimited insurance coverage of noninterest-bearing transaction accounts from Dec 31, 2010 to Dec 31, 2012
	December 2012	Combined total of deposits in noninterest-bearing transaction accounts and interest-bearing deposits held in the same ownership category insured up to (at least) \$250,000
UK	Before 2007	Insurance limit £31,700
	October 2007	Raised to £35,000
	October 7, 2008	Raised to £50,000
	January 2011	Raised to £85,000
Germany	Before 2009	Insurance limit €20,000
	2009	Raised €50,000; coinsurance obligation removed
	2010	Raised to €100,000 (EU directive) ^a
France	Before 2010	Insurance limit €70,000
	2010	Raised to €100,000 (EU regulation)

^a"Directive 2009/14/EC of The European Parliament and of The Council of 11 March 2009, Amending Directive 94/19/EC on deposit-guarantee schemes as regards the coverage level and the payout delay." March 13, 2009.

shareholders, shareholder advisory services, and the affected institutions, who would perceive downward pressure on share prices and upward pressure on the cost of capital.

For these reasons, reintroducing double liability would be difficult; the potential benefits remain intriguing. Double liability's contribution to systemic stability would be heightened if it were augmented by a scaling back of reliance on deposit insurance; doing so, in a competitive marketplace, would heighten the emphasis on depositors as a

class of agents to whom boards of directors are responsible.

Another class of potential gains, if of uncertain size, would be collective savings with respect to oversight and monitoring, both for regulators and the regulated. Shareholders and depositors would face stronger incentives to monitor how their investments and savings are managed, and the risks to which they are exposed. This monitoring role would displace a share of the resources directed at regulatory oversight and compliance, and improve

Table 4: Domestic Deposit Insurance Coverage

Agency	Deposit Insurance Limit (Dollar)	
Canada Deposit Insurance Corporation	100,000	
Newfoundland and Labrador Credit Union Deposit Guarantee Corporation	250,000	
Nova Scotia Credit Union Deposit Insurance Corporation	250,000	
Credit Union Deposit Insurance Corporation (PEI) ^a	125,000	Increased from \$60,000 in 2008.
New Brunswick Credit Union Deposit Insurance Corporation	250,000	Decreased from unlimited in 2008.
Quebec Deposit Insurance Board (QDIB)	100,000	
Deposit Insurance Corporation of Ontario	100,000	
Credit Union Deposit Guarantee Corporation (Manitoba)	Unlimited	
Saskatchewan Credit Union Deposit Guarantee Corporation	Unlimited	
Alberta Credit Union Deposit Guarantee Corporation	Unlimited	
Credit Union Deposit Insurance Corporation of B.C.	Unlimited	Increased from \$100,000 in 2008.

a PEI also covers 100 percent of deposits in RRSPs, RRIFs, and Registered Disability Savings Plans; this is in addition to the combined spousal limits on all types of deposit accounts, which is \$625,000.

Source: Deposit insurance corporations.

on them, because the incentives themselves would discipline management to an extent that went beyond the private oversight role.²⁵

Non-viability Contingent Capital as a Viable Alternative

Shareholder liability clearly is a form of contingent capital. This raises a question: why would it be

²⁵ The result would not obviate regulation, as noted by a reviewer of an earlier version of this paper; the regulator might be seen as a complement, one which addresses the principal-agent problem as between shareholders or depositors and boards of directors. OSFI's Guideline B-20 might be seen in this light – as ensuring that boards of directors understand and enforce financial institution mortgage underwriting policy, with an eye to protecting shareholders and others' interests and, in consequence, in part addressing the limited ability of disperse shareholders to influence boards and management.

appropriate to impose it when G-20 members are in the process of rolling out non-viability contingent capital (NVCC) requirements for similar reasons (Chant, 2011)? G-20 members, including Canada, will require or permit banks to substitute or augment existing regulatory capital by issuing debt that, when traditional capital ratios fall near or below regulatory minimums, the regulator will require be converted to equity. In Canada the regulator is OSFI, and the domestic implementation will convert debt to equity at the prevailing share price at the time the regulator makes the decision to pull the trigger.

Basel-style capital rules, NVCC in particular, can be presented as a substitute for the shareholder liability mechanism that Canada had until the mid-20th Century (Wagster 2012). The two measures, however, are not perfectly substitutable. Contingent capital – bonds or preferred shares that would be converted to common equity shares when an institution neared insolvency – will chiefly, and likely only, be of interest to large institutional investors seeking highly rated interest-bearing products.²⁶

In turn, choices by potential investors in NVCC will tend to be influenced by institutional policy and regulation, and will be steered by available interest spreads and ratings quality. To the extent that this is so, much of the additional monitoring that contingent capital is expected to deliver will in practice be delivered by existing credit ratings agencies. Hence, the contingent capital approach would increase reliance, including by regulators, on credit ratings, something to be avoided (Bergevin 2010). In contrast, the simple mechanism of double liability shares none of those features.

Yet non-viability contingent capital is arriving in the marketplace, and in Canada in the form of rate

reset preferred shares. It will serve as an additional capital buffer, and for that reason limit the spread of damage associated with an insolvency. Additionally, were it to emerge as a relatively expensive form of bank debt (or capital), which it is not to this point, its role in capital adequacy requirements would limit the pace of banks' asset growth, perhaps an effect desired by regulators. But NVCC is unlikely to add to outsiders' monitoring efforts, nor will it affect the incentives facing bank decisionmakers.

Finally, from a financial perspective, contingent capital will come into play as a bank approaches insolvency; enhanced shareholder liability would come into play, as a source of capital, only after an insolvency. The incentives, however, that shareholder liability would create, also would exert their influence before insolvency. Further, because shareholder liability would assist in meeting bank liabilities in the event of an insolvency, contagion in the event of failure would be limited, thus reducing the too-big-to-fail political and regulatory problems discussed at length elsewhere (Kryzanowski and Roberts 1993, for example).

Equity Recourse Notes, a More Viable Alternative

NVCC's shortcomings – in particular its requirement that banking regulators trigger its required conversion to equity at a point when, in their judgment, a bank is approaching insolvency – suggest that the approach will not fulfill its policy goal. Even if regulatory capital ratios are met, a bank may fail. Triggering a conversion will inevitably produce significant market shocks, as the signal will indicate that the affected institution is destined to fail; there will be powerful political and market incentives for regulators and institutional

26 At the time of writing, there have been a number of successful such placements in Europe, and they have sold at high prices (low yields) that indicate buyers do not perceive a meaningful likelihood of a conversion occurring (Wigan, 2014).

managers to find ways to avoid pulling the trigger, which will involve lobbying.

Bulow and Klemperer (2013) have proposed a market-based regulatory capital mechanism that appears to have the desirable characteristics of the above alternatives, and fewer of the failings. Equity recourse notes (ERNs), too, would be a form of contingent capital, but one without a regulatory capital trigger. In Bulow's and Klemperer's conception, ERNs would be relatively senior, long-term bonds, issued by large systemically important financial institutions in quantities that matched those firms' existing unsecured, non-deposit borrowing – meaning bonds, for the most part.

The indentures for those notes would specify equity conversion characteristics as a function of the institution's stock price at the time of issue, not at the time of conversion (unlike NVCC as it is emerging in Canada); Bulow and Klemperer suggest 25 percent of the stock price at the time of the note issue. If, at the time when interest or principal payments on those notes came due, the stock price was less than 25 percent of the amount specified in the notes' capital structure, the issuer would issue stock at current prices, in lieu of payment in cash. The authors' example is as follows: a lender's stock price was \$100 at the time of ERN issue, but less than \$25 at the time that a \$1,000 interest payment was due, the lender would issue stock as payment: 40 shares, being the number of shares at the preset conversion price required to equal \$1,000. If and when the stock price was higher, interest payments could resume in cash.

This simple mechanism has impressive financial stability features. The suspension of interest payments would increase firm liquidity exactly

when needed – when under stress. The conversion of debt to equity would be entirely automatic, and determined by market forces: there would be no requirement for judgment calls with respect to a trigger point, and no requirement for valuations, accurate or otherwise, to be relied on in establishing the institution's regulatory capital ratio. And being market-based, there would be no sudden shock to the market as the debt to equity conversion unfolded; it would be a gradual process, one understood in advance, and priced in to market assessments of a stock's value.

Moreover, the institution's stock price would be lower than at the time of the ERN issue presumably because the firm's profits and prospects had diminished, and the firm was under financial stress.²⁷ The ERN conversion process would automatically reduce the threat to bank liquidity – it would not be possible for the conversion process, nor a regulatory trigger, to push the lender into insolvency. Further, the process would automatically reduce the bank's leverage ratio or, more or less effortlessly, increase its regulatory capital ratio. This would entirely avoid the procyclical nature of discretionary regulatory capital triggers, which inevitably force firms to limit lending and increase capital ratios at exactly the time when a firm, and likely the broader financial system, was already under threat.

The ERN mechanism, in financial terms, is conceptually equivalent to a stapled put and call, each of which is triggered by a single price threshold. If the price trigger is hit, the call pulls in the notes and the put replaces them with equity.²⁸ This mechanism allows the ERN effectively to perform as a loss absorber because, if the trigger was

27 Several reviewers of an earlier draft noted that firms may issue common equity or suspend dividends for ordinary capital funding reasons, pushing the stock toward the trigger point. Should the firm's actions have the likely impact of triggering some conversions, the conversions' anticipated impact on total common equity outstanding would bear both on the market price of the stock and on the capital funding decision; there would be no surprises involved.

28 I thank John Crean for pointing this out, and suggesting the subordinated debt option that follows.

hit, the ERN would be shifted into equity which, as a residual claim on assets, carries the lowest payment priority in an insolvency.

Comparing Price Triggers under Stress

In establishing the NVCC framework, regulators in Canada and abroad considered and rejected preset market-based price triggers for conversion. The reason was concern over potential market manipulation as the firm's share price neared the non-viability trigger point. Under stress, the bonds' prices would be low, and buyers might be tempted to take actions that would depress the stock price below the trigger, and so acquire "cheap" equity. Such actors would benefit from a subsequent upswing in the share price, at the price of dilution, a cost borne by previous shareholders.

Equity recourse notes, however, do not share this flaw to any significant extent. ERNs ultimately would replace the full amount of bank non-deposit liabilities – in large quantities, and the interest payments that become due would be distributed over time. This payment-at-a-time conversion means that the opportunities for gaming would be small in any event. Bondholders seeking to manipulate market prices would have the opportunity to benefit from stock price gains only on the portions of their holdings that had payment dates around the time of their actions, and other market participants simultaneously would be able to hedge their positions.

ERNs, therefore, are largely immune to the concerns over market manipulation to which NVCC would be exposed if such instruments had preset market-price triggers.

Sub-debt, a Variation

An alternative to ERNs would see notes structured as deeply subordinated debt, carrying the same price trigger as ERNs, but without any mechanism for replacing the notes with equity. Under the terms of such notes, once the trigger was hit, the issuer would be obliged to suspend principal repayments. Cash interest payments also would be suspended and, in their place, the issuer would deliver further principal of the same note, commonly known as payment-in-kind, in the amount of the interest owing. This structure is simpler than the ERN, and the security would be simpler to price in the market.

Such notes likely would perform similarly to senior preferred shares.²⁹ These securities would act as loss absorbers, in similar fashion to equity, and so meet the objectives of the Basel regulatory regime for equity. Because the notes would automatically suspend payments when the trigger was hit, there is no need for incorporating a discretionary regulatory trigger. This alternative would, however, lose the shareholder dilution or "bail-in" characteristic of the ERNs or NVCC as currently implemented, likely decreasing the extent to which market discipline would be effective.

DEPOSIT INSURANCE, AND DOMESTIC IMPLICATIONS

Deposit insurance, while typically effective at preventing bank runs, diminishes the normal monitoring incentives that depositors and financial institution investors otherwise would face. In Canada, the issue has grown in importance in a number of provinces, owing to expansions in the amounts of per account coverage, and the scope of coverage (Table 4).

29 The Royal Bank of Canada was the first Canadian issuer of convertible preferred shares designed to act as NVCC, with a conversion triggered in the "remote" event that OSFI deems RBC to be nonviable (Critchley 2014).

This is dangerous, not least because deposit insurance rarely is priced according to risk: the system provides a taxpayer-backed subsidy to risky institutions, at the expense of less-risky ones, and potentially at significant expense to taxpayers.³⁰ This raises monitoring costs elsewhere, including among regulators. Further, unlimited coverage among some provinces, and not others, provides an incentive for institutions in the former provinces to compete for large deposits from out of province.³¹

A review of the provincial deposit insurers indicates little serious contemplation among them of the impact of large failures. A typical insurer, such as Manitoba's, maintains a guarantee fund of about one percent of insured deposits, and no provision for contingent liabilities such as those associated with a large institutional failure (Manitoba 2013, p33). Some retain reserves, for providing transitional assistance to trust companies that find themselves in difficulty, that are trivial by any measure; Alberta's reserve at the end of 2012, for example, was \$238,000 (Alberta 2013, 26). Failures among any of the large credit unions would overwhelm the capital of an insurer, and easily might overwhelm the capacity of a provincial government immediately to offer liquidity support; rescue would come from elsewhere.

Differing provincial deposit coverage schemes, and uncertainty about ultimate liability, add another issue with respect to trust companies. These differences pose obstacles to achieving scale economies among these generally small deposit-taking institutions, for example by taking advantage

of federal legislation that would permit provincially regulated trust companies to incorporate and amalgamate, under federal regulation, across provincial borders. This may limit growth in the sector, and inhibit competition within it.

To deal with this issue, as a transitional measure aimed at reducing the obstacles to moving to a common federal regulatory framework, the federal government recently announced expanded deposit insurance coverage for provincial credit unions eligible to move to the federal framework (Canada 2014). This transitional expansion should be wound back at the earliest possible opportunity.

Provincial deposit insurance programs also must be wound back, to a common and more prudent national standard, such as the federal limit or lower, to enable a speedy end to the federal transitional measure, and for the prudential reasons discussed above.

CONCLUSIONS

As noted by Macey and Miller (1991): "History shows that the nation took a wrong turn when it abandoned double liability for a system of governmentally administered deposit insurance." Yet, implementing dual liability for financial institution shareholders today, while not impossible, seems implausible; winding back clocks, or putting genies back in bottles, rarely can be done. What experience shows, however, is that the mechanism may be of use in steering bank management incentives, while protecting depositors and the

30 CDIC (2013) lays out a proposed framework for expanding and improving on the extent to which federal deposit insurance premiums may be priced according to institutional risk, based on capital adequacy, profitability, asset quality and operating efficiency (non-interest expenses relative to revenue).

31 This is reminiscent of the US's experience with massive failures among savings and loans, and the associated crises at the end of the 1980s. The FDIC had expanded and retained coverage for large amounts of brokered deposits, managed by aggregators, institutional investors searching for yield. The availability of deposit insurance allowed them safely to place deposits with risky institutions, whose failures and the associated costs spread well beyond the savings and loan sector.

system at large from some kinds of institutional failures. Moreover, there is value in simplicity: sometimes, perhaps often, simple is better.

On this view, the Bulow and Klemperer equity recourse note proposal deserves serious consideration; it could be readily implemented in Canada through revisions to the *Bank Act* and accompanying regulations, including those administered through OSFI. Financial system overseers, internationally and at the domestic level should pay more attention to simple, market-based measures to reduce the role of lobbying and regulatory discretion and forbearance, and to reduce the likelihood and impact of institutional and systemic shocks. Regulators should rely less on capital adequacy rules, which are subject to lobbying and to gaming through regulatory capital arbitrage, and tend to be procyclical.

In any event, if increased shareholder liability is not readily achievable, the imperative of limiting the breadth and depth of deposit insurance becomes sharper. If deposit insurance became viable because of the prior discipline that double liability offered, then the disappearance of the latter should not be

accompanied by an expansion of the former – on the deposit insurance score, less is better.

Accordingly, jurisdictions that recently have expanded deposit insurance coverage should wind back their expansions. Jurisdictions with large insurance limits should reduce them so that small depositors are protected, bank runs are avoided, and informed investors face incentives to monitor the institutions that hold their investments. Canadian provinces that have unlimited deposit insurance for provincially regulated financial institutions, should instead impose modest limits on it, and should avoid insuring other classes of savings products or other bank liabilities. Federal accommodation of high or unlimited deposit insurance should be withdrawn at the earliest opportunity.

Overall, the key lesson is that there are simple alternatives and supplements to the current, highly prescriptive approaches to bank conduct and its regulation. Thinking more deeply about the role of incentives in steering bank behavior, and market responses to it, would likely be beneficial to all participants in the financial marketplace.

APPENDIX

Why Was Double Liability Displaced by Deposit Insurance in the US?

Given the historical experience discussed in the text above, and the apparent benefits of double liability, why did the latter fade from practice? The answer is that the development and eventual decline of double liability is intertwined with the history of deposit insurance and its emergence, the theory and practice of corporate liability, and a series of unfortunate events.

One of the reasons that some states, into the early 20th Century, maintained single liability status may have been that they were less economically diverse than those that adopted double liability, which meant that the former necessarily were more exposed to economic shocks. Yet, were they to have imposed tougher liability standards, the development of their domestic financial institutions likely would have proceeded more slowly; hence they were more tolerant of bank risk-taking (Grossman 2001, 2007). In pursuit of growth, on this view, legislators in the single liability states were prepared to accept more banking risk.

Conversely, states that were more economically diverse and were better developed with respect to financial intermediation, also tended to impose double liability through state banking charters. On this view, it was safer in such states thereafter to allow or to create a state system of deposit insurance, because the likelihood of widespread bank failure was lower than otherwise, and the costs to depositors (voters) more limited, owing to double liability. This suggests that the emergence of deposit insurance, in stages over many decades at the state level and from 1933 federally, and aimed at maintaining public confidence in the banking system, depended on the prior existence of double liability.

The pattern of states' introduction of deposit insurance matches this narrative: no single liability state created a deposit insurance system. No double liability state initiated deposit insurance until after it had some years' experience, typically a decade's or

more, as a double liability state. The risks associated with deposit insurance – moral hazard primary among them – were well understood at the time. State legislators came to support deposit insurance, and the safety net it created, if and only if the risks were to be managed and overseen by interested agents, meaning shareholders and managers.

And deposit insurance is and was well known to be risky, owing to its contribution to moral hazard – it lifts from deposit-taking institutions a degree of responsibility with respect to their liabilities to depositors, and it lifts from depositors responsibility for monitoring the diligence with which their savings are managed (Carr, Mathewson and Quigley 1994). The potential beneficiaries include bank managers and shareholders – hence the hazard, as presumptively their information sets are different from and better than those of depositors, regulators or insurers.

The decline of double liability from the policy framework, as deposit insurance evolved, involved tradeoffs. In contemplating the degree to which double liability protected depositors while maintaining appropriate management incentives, and what might have happened had there been deposit insurance instead, from the Civil war through to 1933, the FDIC's review of its first five years of existence was unable to conclude that the new system was clearly better than that which it displaced.

It is also believed that stockholders would have been less willing to contribute to the restoration of solvency and the depositors would have been less willing to accept waivers of parts of their deposit claims to permit reorganization of banks in financial difficulties, had an insurance agency been in existence to absorb the loss...No reasonable estimate can be made of the extent to which these diverse influences might have affected either the amount of losses on assets of operating banks, or the amount of losses incurred by depositors in closed banks, during the 76-year period. (FDIC 1941.)

In other words, the federal deposit insurer was keenly aware that speedy reorganization, wind-ups and resolution of banks approaching insolvency was a desirable feature of the double liability system, and that deposit insurance could not in that respect substitute for shareholder liability. Sixty years on, an evidently predictable and similar conclusion held with respect to bank stability:

...explicit deposit insurance tends to be detrimental to bank stability, the more so where bank interest rates have been deregulated and where the institutional environment is weak....[W]here institutions are good it is more likely that an effective system of prudential regulation and supervision is in place to offset the lack of market discipline created by deposit insurance. Also, the adverse impact of deposit insurance on bank stability tends to be stronger the more extensive is the coverage offered to depositors.... (Demirguc-Kunt and Detragiache 2002.)

Nonetheless, deposit insurance took hold. Chief among the likely reasons in the US was the high rate of banking failures over 1929-to-1933: depositors were not made nearly so whole as previously. Further, crisis-period stock assessments often fell upon already insolvent shareholders. Compounding the apparent unfairness, bank shareholding had become more widespread during the preceding economic boom, and the assessed shareholders more often than previously had no direct connection to bank management. Contrarily, deposit insurers not only made small depositors

whole, it sharply reduced the incidence of bank runs, presumably lowering the likelihood of systemic failures – on this view, deposit insurance was better than double liability at achieving the assigned regulatory goals.

Other factors were at work. Deposit insurance was an attractive regulatory option in part because it backstopped or, in a sense, substituted for the lender of last resort function, and which the Federal Reserve might have been expected to fulfill, but which it did not. Further, the pace of money growth was strongly extremely negative over 1929-33, and recovery was slow in coming. These stresses on the financial system no doubt generated support for a search for alternatives.

Finally, a bad or anachronistic odour had come to surround double liability. Legislators, corporate managers, lawyers and economists developed a consensus view that limited liability was simply a better and more efficient corporate form, in part because it increased the attractiveness, for savers at large, to invest in otherwise risky business ventures, increasing economic potential (Halpern, Trebilcock and Turnbull 1980).

For these reasons, and in particular the emergence of deposit insurance, the 1933 US *Banking Act* began the undoing of double liability for nationally chartered banks. The states had begun to amend their liability rules in 1930, and by 1944 double liability had disappeared from most states (Macey and Miller 1992, 39).

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